



CENTRAL FOOD TECHNOLOGICAL
RESEARCH INSTITUTE
MYSORE-13, INDIA

WEANING FOOD
&
CITRIC ACID

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1 WEANING FOOD - A Pilot Market Report

The term weaning is a process in which an infant is gradually introduced to a variety of liquid, semi-liquid and solid foods to effect a smooth shift to the adult or family food pattern.

The practices that are followed depend on the customs, religion, cultural pattern, socio-economic status of the family and the literacy status of the mother. The cumulative effect of income and education is reflected in the feeding pattern of middle and high income mothers, as noticed in earlier findings.

The above findings provide a lead towards the segments which are likely to be target groups for commercial weaning foods.

Even the rural households are likely to be the target groups as indicated in earlier studies.

CFTRI has developed different formulae based on Ragi/ other cereals and millets, pulses, edible oilseed flour, fruits & vegetables, and eggs.

The present pilot study of market for weaning foods based on households survey as well as retail-audit study has provided a lead towards the usage pattern and conceptual requirement of formulae and potential for CFTRI based formulae.

1.2 COMMERCIAL STATUS OF WEANING FOODS

In developed countries a wide variety of weaning foods predominantly consisting of milk, solids cereals, tuber starch, fruits and animal products are being produced and marketed.

However in India only cereal based weaning food with little addition of milk solids are prepared or manufactured and marketed in the country.

Some popular cereal based brands are 'Cerelac', 'Nestum' and 'Farex'.

The above brands are being produced in the country by three firms and are available in the following unit sizes:

- a. NESTUM .. 500 g
- b. CERELAC .. 400 g
- c. FAREX .. 400 g

The list of manufacturers of weaning foods is presented below:

<u>Sl. No.</u>	<u>Manufacturer</u>	<u>Brand and Label Description</u>
1.	M/s Kaira District Cooperative Milk Producers' Union Ltd. ANAND, Gujarat	'BAL-AMUL' Cereal with milk
2.	M/s Glaxo Laboratories Ltd. BOMBAY	'FAREX' Cereal with milk
3.	M/s Food Specialities Ltd. MOGA	'NESTUM' Baby cereal
4.	- do -	'CERELAC' Instant wheat cereal

Besides the above, following unit has been given the letter of intent:

<u>Unit</u>	<u>Type/ location</u>	<u>Product</u>	<u>Capacity* (tonnes)</u>	<u>Licence date</u>
M/s Andhra Pradesh Dairy Development Corpn. Ltd Lalapet HYDERABAD	NANDYAL New unit Kurnool	Weaning Food	500	19.10.81

(* per year)

According to the statistics available, the production of weaning food in 1967 was only nominal of 330 tonnes with an installed capacity of 600 tonnes, which was improved to 1005 tonnes in 1971. However, the spurt in expansion of capacity as well as production was noticed from 1980 onwards when the production improved to 3100 tonnes with a capacity of 10300 tonnes. During 1982, production stood at 4300 tonnes by 3 licenced units. The projected production based on the earlier performance would be 8400 tonnes in 1985 and by 2000 A.D. at a very nominal estimate, it is expected to reach 12200 tonnes at the same trend.

Table 1 : Trend in production of weaning food in organised Sector

Year	Production ('000 tonnes)	
	Installed capacity	Actual
1967	0.6	0.3
1970	0.62 (2)	0.68
1975	8.95*(6)	5.40*
1980	10.3 (3)	3.1
1982	10.3 (3)	4.3
1985**	--	8.4
2000 A.D**	--	12.2

Figures in parenthesis refer to No. of units

* also includes high protein foods

** projected production based on trend.

Advertising and Sales promotion for weaning foods used by the commercial sectors:

More sophisticated publicity media such as TV, cinema, newspaper are being used for sales promotion in our country and there is no specific data on the expenditure on advertisement by the manufacturers.i

Some of the advertisement slogans used for different brands are:

FAREX -

- It is more tasty. It is more complete.
- Every loving spoonful is good for your baby's growth.
- When he is 3 months old milk alone is not enough, your baby needs Farex.
- Doctors recommend Farex baby's ideal solid food for rapid all round growth

CERELAC -

- Baby's nutritionally complete Cerelac food complete with milk, sugar and love.
- A delicious complete food for your baby.
- Cerelac already contains milk.
- Cerelac provides a nutritionally complete food in a delicious form.
- A nutritionally complete food should contain all the nutrients in the right proportion.

NESTUM -

- a) Nestum as your food given to child in different types.
- b) Baby cereal Nestum, Best for beginning fit for growth.
- c) Nestum and Mixed milk is too hygienic food.

The analysis of the above slogans indicate following factors and are taken into consideration for catching the attention of the consumer:

FAREX -

- a) Taste
- b) Baby's growth
- c) Need for introduction of supplementary solids at 3 months
- d) Doctors recommendation as an ideal solid food.

CERELAC -

- a) Nutritionally complete formula
- b) Taste for the child.

NESTUM -

- a) As your food
- b) Best for beginning, i.e., growth stage
- c) Too hygienic food.

1.3 GOVERNMENT POLICY & QUALITY REGULATIONS WITH RESPECT TO WEANING FOOD

Industrial and licencing policy with reference to weaning food industries:

With a view to channelising the development of industries according to policy and requirement, the Government of India follows a policy of licencing of industrial units under the Industries (Development & Regulation) Act 1951. A licence is required by all industrial undertakings for manufacturing any of the items in the first schedule of the Act, whether in the public or private sector unless they are exempted from the licencing provisions of the Act as a part of liberilisation of industrial licencing. These industries are known as scheduled industries. Weaning food industry is included in the above schedule and hence, licencing is required for its manufacture.

Excise:

An infant food is intended for feeding infants at the weaning stage as a partial substitute for infant milk food or for mother's milk. Therefore, it is exempted from Central excise.

1.4 ISI SPECIFICATION FOR WEANING FOODS

The processed cereal weaning foods shall be in the form of powder, small granular or flake free from lumps and shall be uniform in appearance. It shall be free from dust and extraneous matter and free from preservative and added colour. It shall not contain any added fat other than fat derived from material used in preparation of the powder. It shall be free from any material and bacteria which are harmful to human health.

Composition of weaning food based on ISI Specifications

Moisture (%) Max.	10
Protein (%) Min.	14
Fat (%) Max.	7.4
Crude fibre (%) Max.	1.0
Carbohydrate (by diff.)	45
Ash (%) Max.	5
Acid insoluble as (%) Max.	0.05

1.5 WEANING FOODS FORMULATIONS DEVELOPED AT CFTRI

CFTRI has developed and standardised the technologies for the manufacture of Malted Weaning Food, high protein weaning foods, as well as Strained baby foods, based on fruits and vegetables, meat and poultry products, which have been tested extensively for their nutritive and growth promoting properties.

1.6 PRESENT WEANING FOOD PRACTICES IN INDIA

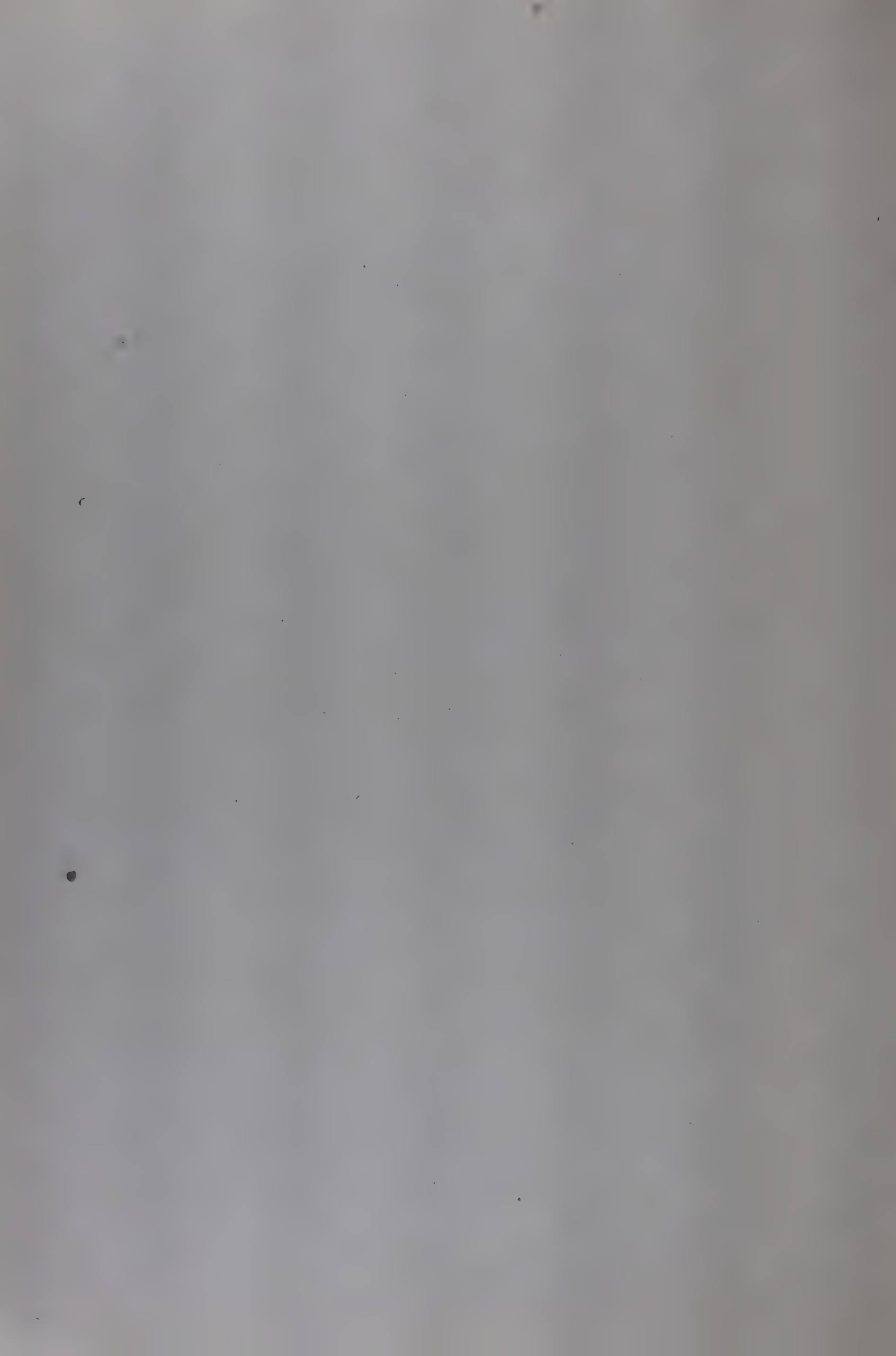
A study of the present weaning practices is necessary to get an understanding of the present market potential for weaning foods.

In India, the dietary pattern of young children during the post-weaning period is predominantly based on cooked cereals and cereal gruels and includes negligible quantities of protective and protein rich foods, such as milk, meat, fish and eggs. As a result of dietary deficiencies in respect of proteins, vitamins and minerals, protein malnutrition and other deficiency diseases are strikingly seen in weaned infants and young children belonging to the low income groups. The shortage and high cost of milk in these regions necessitate the development of nutritious and acceptable processed food formulations based on readily and locally available plant proteins, such as edible oilseeds and pulses.

Weaning is a process in which an infant is gradually introduced to a variety of liquid, semi-solid and solid foods to effect a smooth shift to the adult or family food pattern. Terms such as "supplementary foods" and "complementary foods" are used to denote the full spectrum of foods introduced into the dietary pattern.

The practices that are followed depend on the knowledge, beliefs and attitudes of the mother. These practices are passed on from one generation to the other as every young mother is supported by her mother or mother-in-law during the early period of motherhood. The type of feeding practice that the mother employs depends upon the following variables:

- a) customs
- b) superstitions and beliefs
- c) religion
- d) cultural pattern
- e) place of residence
- f) socio-economic status of the family
- g) literacy status of the mother.



Any practice is likely to change with changes in attitude and knowledge, and weaning practice is no exception. Attitude and knowledge can be influenced strongly by socio-economic status and education. Thus we find in the same religious or cultural group, different weaning practices at different income and educational levels. Since weaning practice relates to the knowledge of the woman, it is her awareness that is most important. In a rural situation, the mother or mother-in-law has a strong influence on the practices related to infant feeding. In an urban set-up, employment makes women dependent on others, such as elderly relatives, servants or older siblings, for the feeding of their infants. No large scale data is available on how weaning practices have changed in the last two or three decades due to economic improvement and education of women. However, the differences observed in weaning practices have fitted largely in the following aspects:

- a) age at which weaning is started
- b) age at which semi-solids and solids are introduced
- c) type of weaning foods introduced at different stages
- d) frequency, regularity and quantity of weaning foods introduced.

Various studies conducted earlier on present weaning practices has mentioned in earlier chapter indicate that following factors decide use of commercial weaning foods (workshop on Weaning Food - A Report, 1983).

i) The stage at which the commercial weaning foods are introduced is mainly based on the socio-economic status of the families in the cumulative effect of income and education, as reflected in the feeding pattern of middle and high income mothers.

ii) Working mothers are likely to consider commercial weaning food as a more convenient supplementary food, since they depend on either family elders or servants for feeding their infants.

iii) Use of commercial weaning food is related to introduction of milk and fruit juice as a supplement.

iv) The introduction of commercial weaning foods was 11% between 0-3 age groups (in months) at higher income groups, 33% between 3-6 months and 83% between 9-12 months. However, the per cent of middle income families introducing commercial weaning foods were hardly 1% between 0-3 months, 4% between 3-6 months and 6% between 9-12 months. Hardly 1% of low income families use commercial weaning foods even between 9-12 months.

The above findings show that segmentation of the total potential market for commercial weaning foods should take note of the following:

- i) Manufactured weaning foods will be bought by families who are conscious of the nutritional needs of the infants.
- ii) Buyers are families belonging to the higher middle and high income classes.
- iii) The convenience and ready to use is also an important factor that makes the working mother to decide on the purchase of the manufactured weaning foods; irrespective of the educational status of the mother.
- iv) There is some amount of consumer appeal for brand names of weaning foods.

Hence, the potential market will consist of the buyers from the upper middle and high income groups especially in urban and semi-urban areas.

There is no ready estimate available for projected potential for weaning foods.

1.7 FACTORS MOTIVATING USE OF COMMERCIAL WEANING FOODS- A Pilot study of households and Retail audit

A pilot study was undertaken to study the factors motivating use of commercial weaning foods vis-a-vis home made preparations and future potential. For this purpose the study was undertaken in following two stages:

- a) Households level
- b) Retail level.

At the household level, 54 households were selected based on purposive sampling taking note of the households with children between 0-4 years age groups. Mothers were interviewed with the help of a standardised interview schedule and the findings were recorded.

At the retail level, 22 retail outlets including major departmental stores, drug shops located in major marketing places and residential extensions were selected for retail audit.

1.7.1 Household study

The socio-economic nature of the sample households studied is given in table 2.

The distribution of families according to economic class indicates that more than 60% of the families fall in the income group ranging from Rs.1,000-3,000 and only 35% are in income range upto Rs.1,000/- per month.

Regarding literacy status of the housewives or the mothers (who are expected to decide the child's diet), 70% have education upto SSLC and 30% have graduation and above.

More than 42% are with a family size of 3-5, which is in accordance with the average Indian family size of 5. 17.7% are with a family size of more than 7 and only 18.5% are with 3 members.

Out of 54 families, 26 households have children in the age group of 0-1 (48%), 18 with children between 1-2 and 10 with children between 2-3 years of age.

More than 60% of the families studied are of a single unit type with only 40% with joint family system.

The religionwise representation was not available in the sample since more than 75% are Hindus with Christians and Muslims, together sharing only rest 25%.

The distribution of households by food habits indicate that 53% are non-vegetarians and rest are vegetarians.

Irrespective of the income and literacy status of the housewives, it is noticed that the first introduction of semi-solids food is between 4-5 months (Table 3).

35 out of 54 families continue semi-solids upto the age of 3 years. This shows the potential existing for commercial weaning food, for which the target group could be between the age of 4 months upto 3 years in higher middle and high income groups.

The above socio-economic factors have been taken into consideration for analysing the introduction of type of weaning food, including commercial weaning foods and their attitude towards existing commercial weaning food formulae and future conceptual requirements.

Statistical analysis

i) Use of commercial weaning foods Vs socio-economic status

Out of 54 families studied, 43 households (nearly 80%) use commercial brands and only 11% do not use commercial brands.

However, the relationship between income group Vs use of commercial brands using X^2 does not show any relationship (Table 4).

Even the relationship between literacy status of housewives and usage does not show any statistical relationship.

The size of the family as well as the structure of the family would not show any relationship to the use of commercial foods contrary to the earlier studies reported.

ii) Brand favoured by families using branded weaning food

More than 50% favour Farex, followed by Cerelac and lastly Nestum. The above finding is complementary to the findings of the retail audit study.

iii) Reasons for using commercial weaning food/particular brand

An analysis of the reasons ranked in order of importance would indicate the following (Table 5):

- a) Doctor's prescription, taste of the child and easy digestibility are given I rank by over 50% of the households using commercial weaning food.
- b) Nutrition and ease of availability has been given the II rank by 50% of the household.
- c) III rank has been ^{given} by more than 90% to taste of children, digestibility, nutritious and Doctor's prescription as factors motivating deciding the brands.
- d) The hygiene has been given the last rank.

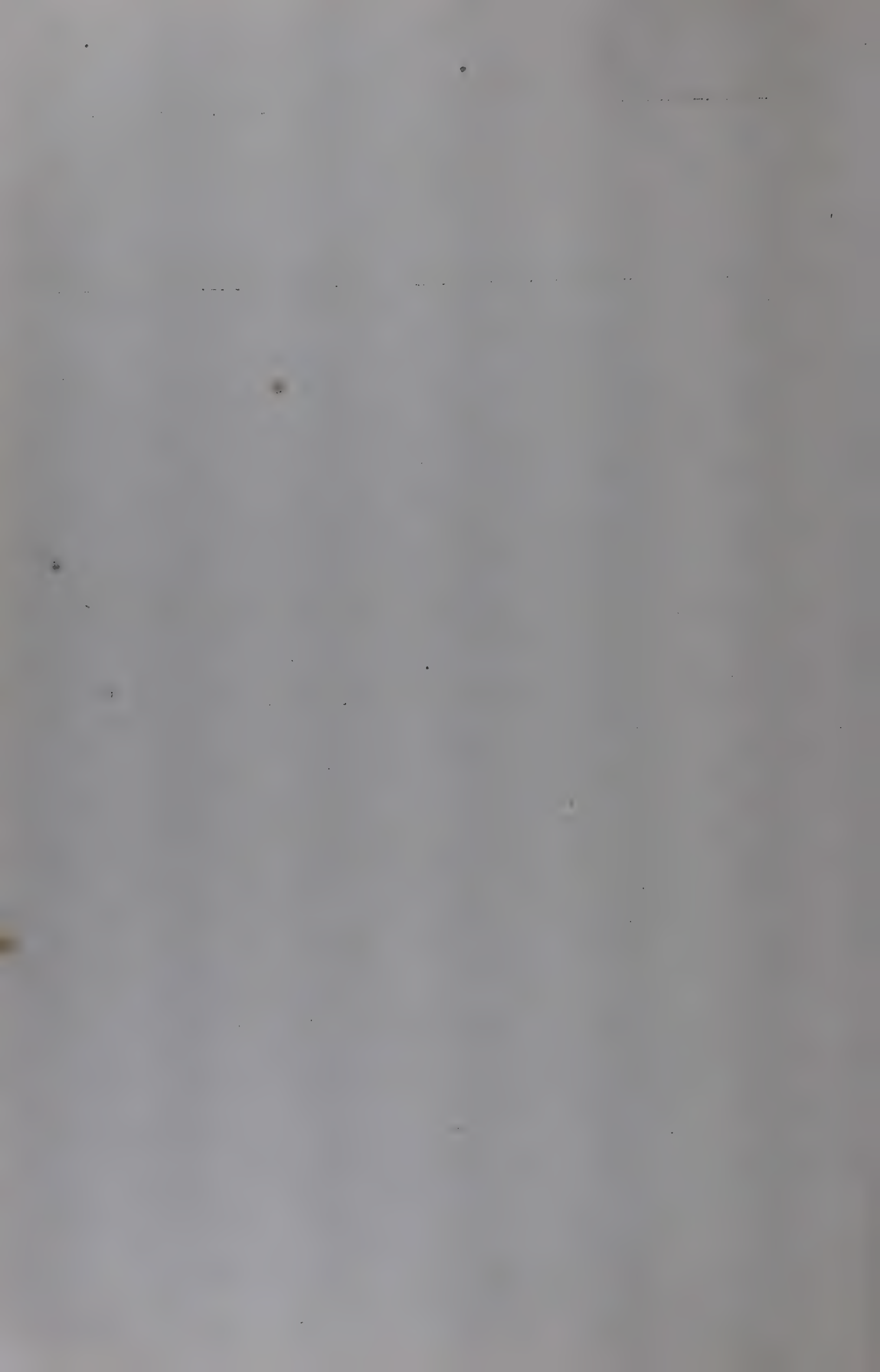
Home made weaning food used and reasons for their preference to commercial weaning food

Ragi based formula is the most popular one among the users of home made weaning food followed by rice-based formula. Very few families have reported use of fruits, vegetables, meat or egg preparations as supplementary foods to children upto 3 years (Table 6).

Cost is reported to be a prohibitive factor for not using commercial weaning foods. Taste is given the least rank by most of the families.

Opinion of commercial brand user families regarding existing formulae

More than 50% of the users of commercial brands opine lack of availability of different formulae and exorbitant cost. The lack of variety in taste is given last rank by more than 80% of the households (Table 7).



Concept of new weaning formulae developed at CFTRI as relevant to households studied

Out of the four formulae tested, ragi based weaning food is given the top rank by over 70% of households, followed by fruit and vegetable based formula (14%) and no preference for meat and egg-based formulae. However, fruit and vegetable based formula is the next favoured formula followed ^(60%) by Avalakki based formula which has been given third preference by 60% of households (Table 8).

Meat and egg-based formula is given the last rank by more than 50% of the households.

Summary

From the foregoing analysis, following points will emerge:

- a) 43 out of 54 households (i.e., nearly 70%) use commercial weaning food.
- b) Significant statistical relationship between usage Vs income family size and structure, and literary status could not be found.
- c) Irrespective of the income and literary status, first solid diet is reported to be introduced by all the households reporting introduction of commercial foods between 4-5 months and only 9 families have introduced at 3 months itself.
- d) Ragi based formula is being used by more than 70% of households not using commercial formula followed by rice based formula. Cost is the main factor prohibiting use of commercial brands.
- e) 50% of households using commercial formula are satisfied with existing commercial formula.
- f) The reasons for non-satisfaction of existing formula are, use of only wheat or rice in the formula, followed by prohibitive cost.
- g) The study of future potential for certain formulas developed at CFTRI as a concept presented to the families, brings out the most favoured formula as ragi based followed by fruit & vegetable based; third as avalakki based formulas. Meat and egg based are given last preference by majority of households.

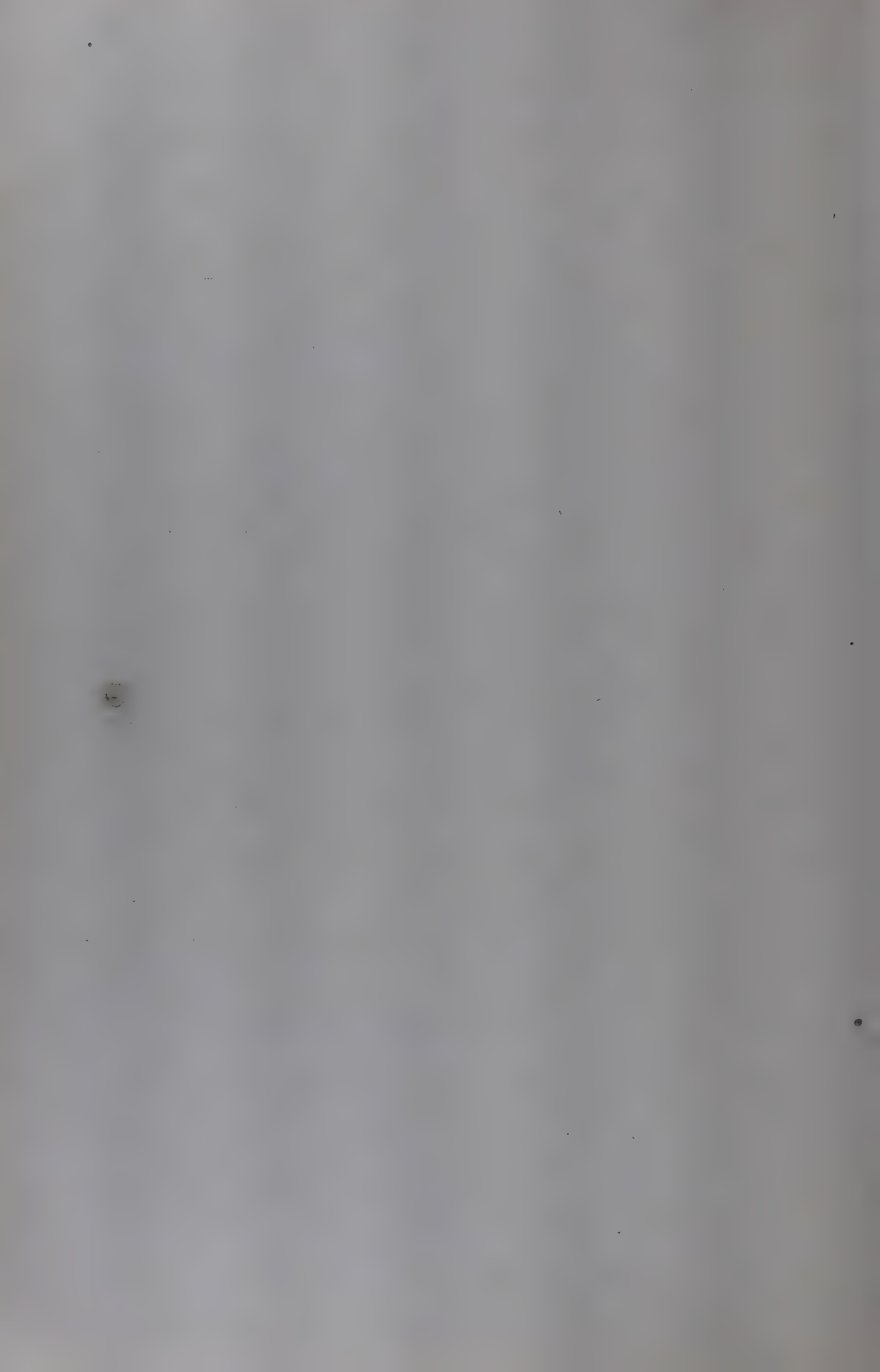


Table 2 : Socio-economic status of households and usage pattern of commercial weaning foods

Income	Upto S.S.L.C n=38		Graduates & above n=16	
	Using	Not using	Using	Not using
below 1000	13	6	2	2
1000 - 2000	15	4	9	-
2000 above	4	-	3	-
Total	32	10	14	2
(in%)	74	26	87.5	12.5

Table 3 : Distribution of households by age of first introduction of commercial weaning food and income

Age (month)	Income groups in No. of households					
	Below 1000		1000 - 2000		2000 - 3000	
	Upto SSLC	Graduation	Upto SSLC	Graduation	Upto SSLC	Graduation
3	3	-	4	2	-	1
4-5	9	2	10	8	3	2
6-8	5	-	3	1	-	1
Total	17	2	17	11	3	4

Table 4: Family income Vs usage

Income	Commercial brand		Total
	Not using	Using	
below 1000	5	14	19
above 1000	6	29	35
Total	11	43	54

$$\chi^2 = \frac{\sum (5)(29) - (6)(14)}{(11)(43)(19)(35)} \cdot \frac{7^2}{54} = 0.64$$

No association between income groups against usage of commercial brands of weaning food

Table 5: Factors motivating use of specific brands ranking in order to preference given

	R a n k					
	I	II	III	IV	V	VI
1. More hygienic	14	6	3	6	3	12
2. More nutritious	5	10	11	3	11	4
3. Tasty and relished by the child	7	8	10	10	3	6
4. Easily available	5	11	6	8	6	8
5. Doctors prescription	7	5	9	4	13	6
6. Easily digestible to child	6	4	9	8	8	9

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Table 6 : Distribution of households by use of commercial brands and home-made preparation

Type of weaning food	No. of families using	No. of families using commercial brand as well as home-made preparations
<hr/>		
<u>Home made -</u>	<u>25</u>	
Ragi based	16	
Rice based	9	
		15
<u>Commercial brand -</u>	<u>43</u>	
Farex	23	
Nestum	11	
Cerelac	15	

The above table indicates the usage of commercial brand, as well as home-made preparation. In this cumulative total is not relevant, since some households have referred to more than one brand

Table 7 : Reaction regarding commercial formula by user households in order of rank preference

	Rank			
	I	II	III	IV
<hr/>				
1. Does include only cereals	11	8	6	2
2. Too costly	8	8	5	5
3. Does not include either fruit, vegetable or pulse formula	6	8	9	5
4. Does not include variety in taste	2	3	7	15
<hr/>				
Total	27	27	27	27

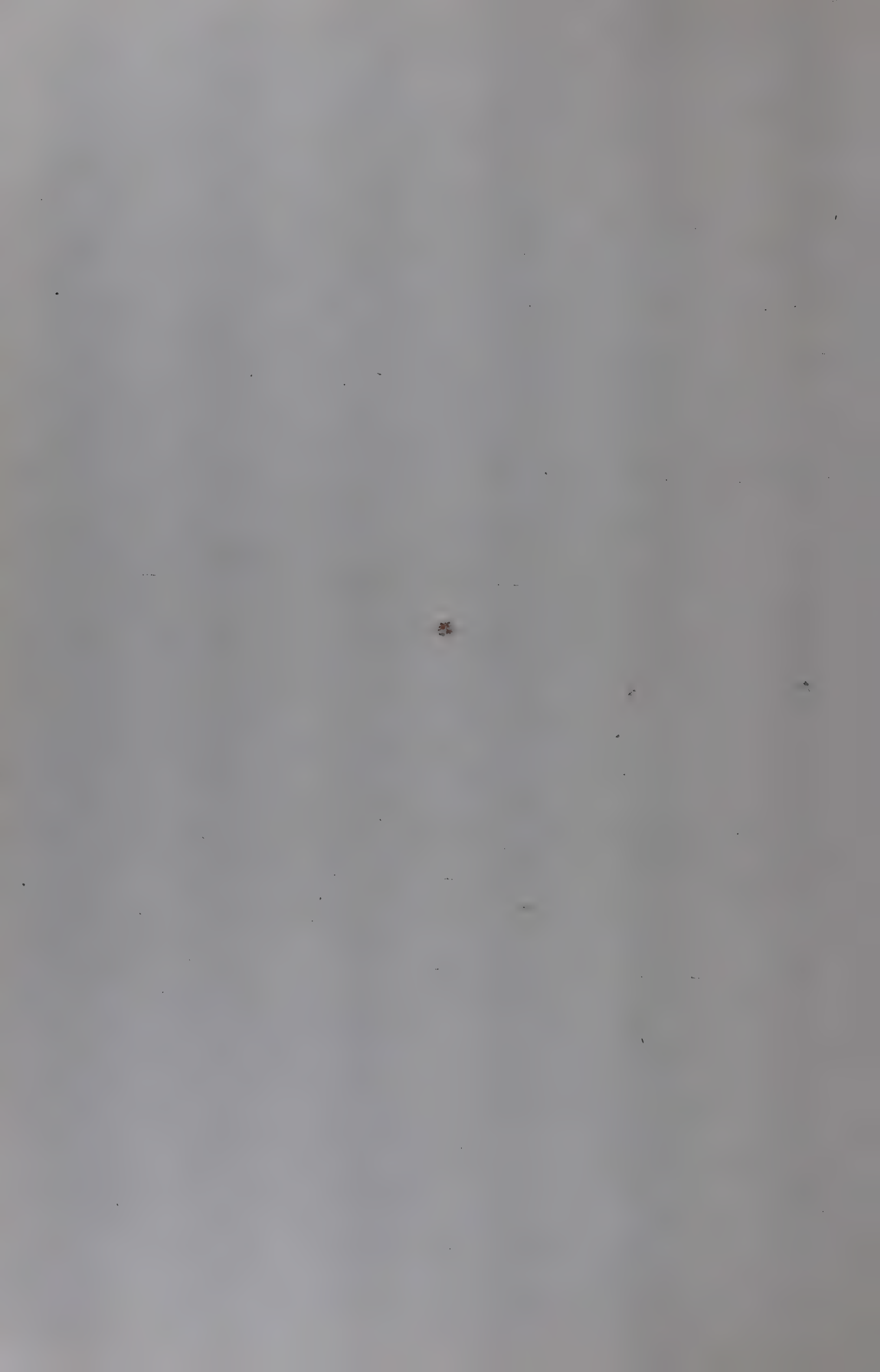


Table 8: Distribution of households by their preference to new formula in order of rank preference (given)

New formula	R a n k			
	I	II	III	IV
Ragi based	42	10	1	1
Fruit & vegetable based	8	33	6	7
Meat & egg based	-	4	9	14
Avalakki based	3	3	29	14

1.7.2 Retail Audit study

As a complimentary to the household study, a retail audit study was undertaken in Mysore city. For this purpose, major retail outlets including drug stores and super markets located in centralised places and few selected stores distributed in extensions were personally visited and information on brands sold, quantity sold per month, retailer's margin, change in the market size since last 5 years and finally their opinion regarding future potential was studied.

The findings of the above study are presented in Table 9.

The main brands available are Cerelac, Nestum and Farex. It is reported that Balahar, an other brand is out of the market since last 2 years. Out of total 1660 tonnes marketed by 22 retail outlets, 60% is shared by Farex, followed by Cerelac (25%). The unit sizes sold are 400 g each of Cerelac and Nestum, and 500 g of Farex in tin containers with an average price of Rs.14/- for Cerelac, Rs.20/- for Nestum and Rs.20/- for Farex, for a unit pack of 500 g. It is therefore, noticed that while Cerelac costs Rs.50/- per kg, Farex costs only Rs.40/- per kg with Nestum priced at Rs.45/- per kg.

The analysis of the change in the market for weaning foods, as observed by the retailers indicate an increase in market (sales) since last 5 years. However, if percentage change could be any indicator for future potential, no ready conclusion could be drawn from an analysis of the above, since there is a wide variation in the percentage change observed by the retailers. However, as a rough indicator, it could be noticed that nearly 50% of the retailers have indicated increase in sales of all 3 brands upto 50% and between 30 to 40% by 25%. Hence, an average of 25% could be taken for the analysis of future potential which covers 75% of observations of retailers. At the above rate, the average sales per annum is at the rate of only 5% which is very nominal indicating a very slow growth of sales performance.

It is needful to consider the negative growth of in sales as observed by 3 units at 15-20% for Cerelac, 50-60% for Nestum (2 units) and 15% (as observed by one unit only) for Farex. Therefore, an indepth study is required for a decisive conclusion to be drawn from a retail audit study.

An analysis of the opinion of the retailers regarding the market potential shows that there is a good potential market for weaning foods in urban areas, if Mysore city could be taken as a sample representing urban market. However, the market leaders have opined that future market depends on introduction of new varieties based on fruits, vegetables and other cereals with small unit size, ^{with} flip-open tops, which could be readily used, as noticed in Western markets.

1.8 ESTIMATE OF POTENTIAL MARKET FOR WEANING FOOD

Based on the earlier studies, which provides relationship between the use of commercial baby food and use of commercial weaning foods, an analysis of the potential market could be made. The average consumption of infant food per child could be estimated at 45.6 kg/year at 125 g requirement per day per child. Hence, the estimated production of 50,000 tonnes is expected to meet 1.1 million children out of children population of 22.11 million between 0 to 2 age groups, which form only 5% of the total children population. The present estimated level of production of commercial weaning foods is expected to meet the requirement of 1.5 lakh children at the estimated average intake of 80 g per day per child or 29.2 kg per year.

Considering the target group of potential consumer are likely to be 2 million children, who are expected to have already been introduced ^{with} Milk baby food, out of which only 10% are being catered to at present. Hence, the projected potential demand could be estimated at 32,120 tonnes.

However, the rural households especially in areas of plentiful agricultural production will also be another target group desiring to be considered in any marketing strategy for weaning foods. But, there is no ready data available on the

uptake of either infant food or weaning food by progressive affluent agricultural rural households created due to various government promotional policies for improving the agricultural sector.

Table 9: Brands sold and quantity sold in retail outlets

	Quantity sold per month (kg.)	Unit size (g/tin)	Price/ unit (range Rs. per unit)
Farèx	970 (60.0)	500	19.25 - 21.00
Nestum	270 (15.0)	400	13.25 - 15.00
Cerelac	420 (25.0)	400	19.30 - 21.15
	1660		

Figures in parenthesis refer to % of total

2 A Note on CITRIC ACID

Citric acid for commercial use is made by fermentation process. The medium used most frequently is molasses. It finds its major use in food industries as well as drug industries. In the food industry citric acid is used in soft drinks (concentrates), candies, jams and jellies both for flavour and preservation. It is mainly estimated that about 500 tonnes of citric acid are being utilized by the fruit and vegetable processing industry in our country.

Production in India

It is reported that there are only two firms which are actively involved in the manufacture of citric acid, though licence from DGTD have been granted to five firms. In India, according to the report, one company produces citric acid from molasses and this is accounted for to the extent of 85% of the total domestic production. The other company is said to utilize tricalcium citrate which is being imported and citric acid from this source is accounted for the remaining 15% of the total domestic production.

Import

India imports citric acid from countries like Belgium, China P RP, German F RP, Japan, The Netherlands and Switzerland. During 1981-82, India imported 96,600 kg of citric acid valued at Rs.11,62,652.

Trend in price

The user industries of citric acid are showing an anxious concern towards the trend in high cost of citric acid. The price of citric acid is on the steady rise in every summer, when the demand for soft drinks is growing substantially, thereby causing a gross imbalance in demand and supply. It is pointed that there is a scope for establishing a 10 T/day plant of citric acid in India. The soft drink concentrate sales of 1985 is given in the following table.

Product Category -----	All India (Rs.Crore) -----	Largest manufacturer (L.M) -----	L.M's sales as % of All India sales -----
Squashes	4.98	Kissan	54.2
Cordials	0.32	Kissan	70.5
Crushes	0.34	Kissan	84.5
Juices	0.40	Mohan Meaken	79.0
Powders	6.79	Pioma Industries	80.0

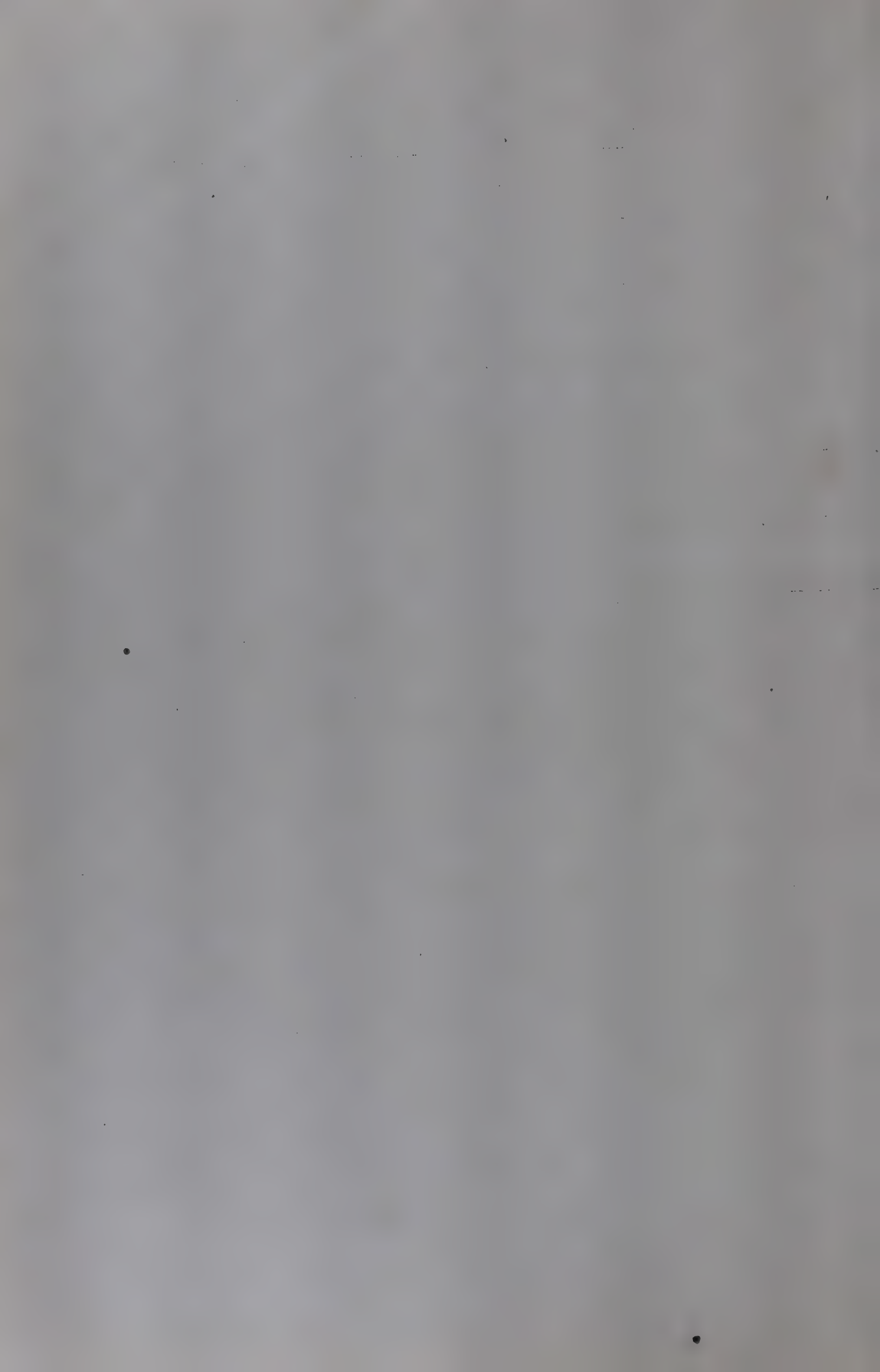
(Source: Business World, June.23 - July.6, 1986)

In recent times, the price of citric acid has risen to Rs.60/- per kilogram from Rs.35/- per kilogram. However, the present price of citric acid in international market is around Rs.13/- per kilogram.

Government policy

The government has placed the import of citric acid in the list of "Limited Permissible Item". The import duty on the intermediate product is more than the end product itself, for example, the import of tricalcium citrate (the intermediate product) is under OGL. The import duty on this intermediate product is as high as 141.5% as compared to citric acid (itself) which has only 110% import duty.

It is envisaged in the trade circle that the price of citric acid can be brought down to Rs.27/- per kilogram if only government permits the import of citric acid under OGL temporarily for 3 months during summer and this may reduce greatly the imbalance between supply and demand.



3 MARKET INTELLIGENCE

3.1 New Food Products

3.1.1 Beverages

<u>Unit Address</u>	<u>Brand</u>	<u>Products manufactured</u>
Kissan Products Ltd P.B.No.1676 Bangalore - 560 016	SIPP	Soft drink concentrate (Orange)
- do -	HASRAS	Fruit Juice concentrate
Trade Links Ltd Prabhat Kiran 17 Rajindra Place New Delhi - 110 008	DRUK	Fruit juices and squash
Spencer Consumer Products & Services Ltd 769 Anna Salai Madras - 600 002	FRUITPUNCH	Orange, sweet lime, mango and lemon
Brooke Bond India (Ltd) Ghatkesar Factory Secunderabad - 500 003	RICH	Instant coffee

3.1.2 Confectionery & Dairy products

Food Specialities Ltd M-5A Connaught Circus New Delhi - 110 001	EVERYDAY	Dairy whitener
Wallace Flour Mills Co.Ltd Foods Division Mazgaon Bombay - 400 009		Crystal gelatine
Gujarat Co.op Milk Marketing Federation Ltd Anand - 388 001	TRIX	Chocolate covered Nouget bar
A.P.Dairy Development Co.op Federation Ltd Vijayawada	VIJAYA	Shudh milk (stays fresh for 6 months)

3.1.3 Fruits & Vegetables

A.G.Sons 657 T.H.Road Madras - 600 081		Mango pulp
Ashok Sales Corporation 51/53 Nayaganj Kanpur - 208 001	ASHOKA	Tomato ketchup
MTR Products Lalbagh Road Bangalore	MTR	Pickles (all types)

3.1.4 Instant Mixes

Henry Sales Agency
P.O.Box.No.9150
Calcutta - 700 016

MMORE

Ice-cream powder
China grass mix

Satvik Foods
1202-B Sadasiv Peth
Pune - 411 030

Instant pulav, Masala
rice & Instant puran

Sri Ganeshram & Co
193 Thambuchetty Street
Madras - 600 001

777

Sambar powder and
Appalams

Uma Food Products
305 High Tech.Industrial
Centre
Gumpah Road
Bombay - 400 060

ET-MI

Instant cake mix,
milk shake & other
instant mixes

- do -

SURPRICE

Instant meal maker
mix

Brooke Bond India Ltd
Mahalaxmi Chambers
M.G.Road
Bangalore - 560 001

SONA

Meat masala, garam
masala, sambar and
other spice mixes

MTR Products
Lalbagh Road
Bangalore

MTR

Instant gulab jamun
mix, potato saghu,
spiced chutney powders
and other mixes

3.1.5 Meat, Fish & Poultry products

Kerala State Co.op Federation
for Fisheries

NUTRIFISH Canned fish, shrimp
and pickles

3.1.6 Oils & Fats

Tamil Nadu Co.op Oilseeds
Growers Federation Ltd
Madras

TANCOFS

Groundnut oil

Tirupati Rasayan Udyog P.Ltd
Hissar

DULHAN

Double refined
groundnut oil

R.P.Hydro Oils Limited
1234 Urban Estate
Jind - 126 102 (Haryana)

KUKU

Refined soya oil

Prestige Foods Ltd
30 Jaora Compound
MYH Road
Indore - 452 001

Winterised soya
bean oil

3.1.7 Packaging material

Shiva Glass Works Co.Ltd 27 Brabourne Road Calcutta - 700 001		Glass jars & bottles
Jg Glass Ltd Air India Building 12th Floor Nariman Point Bombay - 400 001		Green glass bottles & jars
B.D.J Glass Industries 34A Metcalf Street Calcutta - 700 013		Glass bottles
Shree Govinddeo Glass Works Ltd 8 Ho-chi-Minh Sarani Suite No.26 2nd Floor Calcutta - 700 071		Glass jars
Trade Centre 9 Bombay Mutual Building Sir P.M.Road Bombay - 400 001	DYNAMIC	Plastic containers
Minta Containers Pvt.Ltd 36 Oasis Vakola Bombay - 400 055		Fibre drums and containers

3.1.8 Pasta products & Cereal products

The Wallace Flour Mills Co.Ltd Foods Division Hancock Bridge Mazagoan Bombay - 400 009	SNACKER	Corn kurls (Ready-to-eat snacks)
- do -	SNACKER	Fry & eat snacks (plain, onion & masala flavours)
- do -	PASTAMAN	Macaroni
Tasty Bite Eatables Ltd Continental Building 135 Dr. Annie Besant Road Worli Bombay - 400 018	TASTYBITE	Ready-to-serve meals, frozen vegetables and fruit paste
Sawant Food Products Ltd 728 Regent Chambers Nariman Point Bombay - 400 021		Frozen foods
Taza Foods Private Ltd 27 Maker chambers No.111 Nariman Point Bombay - 400 021	TAZA FOODS	Papads
Patira Marketing (Bombay) 32 Sarvodaya Trust Building Gokhale Road (South) Bombay - 400 028	TASTEE	Papads
- do -	RA-RA	Instant noodles

3.1.9 Special Foods

J.B.R.Food Process
3, III Lane B.N.Road
T.Nagar
Madras - 600 017

VISTRAM Diabetic food

Intrastructure Pharmaceuticals NUTRIMIN High Protein biscuits
4/35 Nayapura
Indore - 452 003

3.2 Instant Coffee - Production

<u>Year</u>	<u>Production (Tonnes)</u>
1981	4508
1982	4601
1983	5439
1984	5647
1985	5173*

(* upto September 1985)

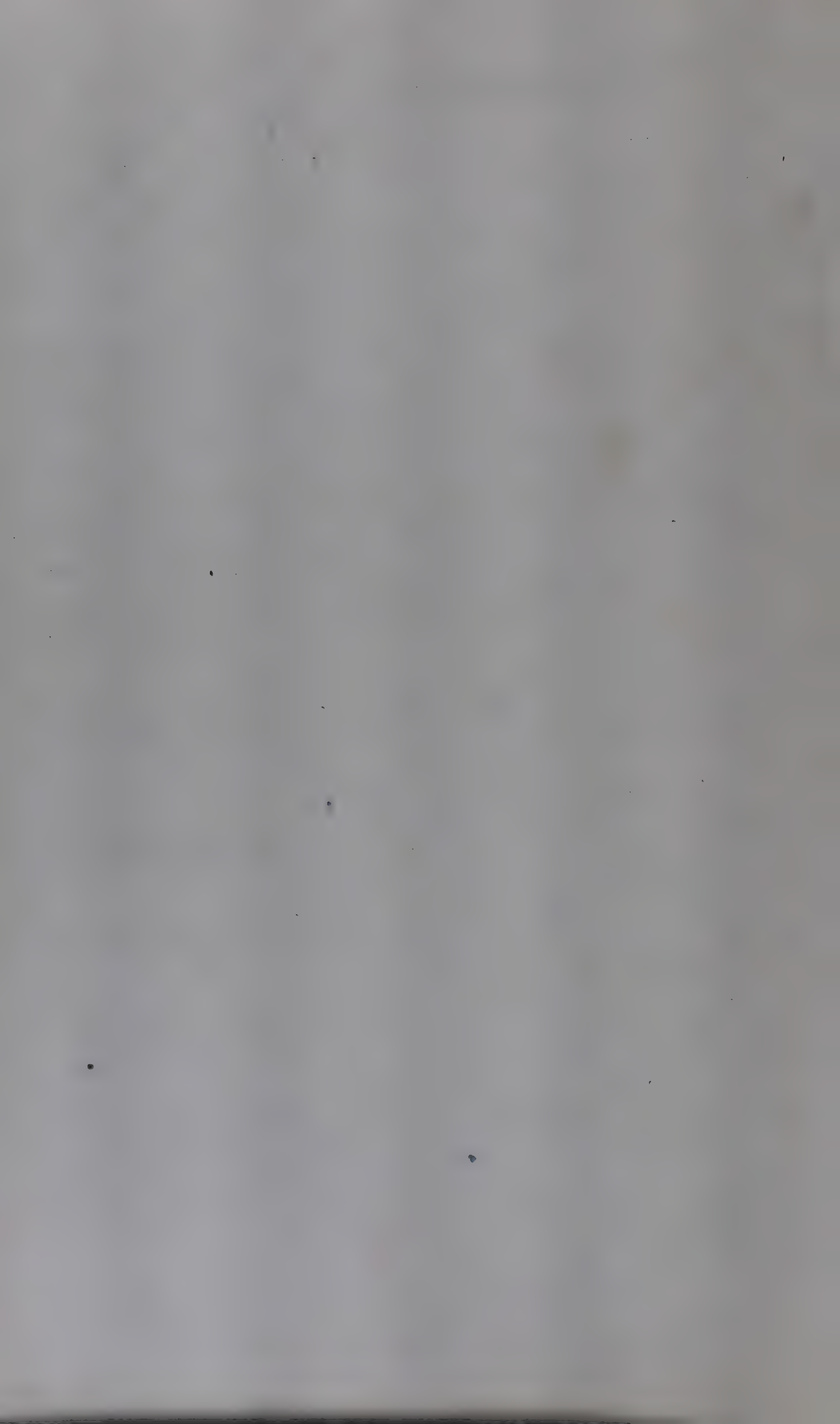
3.3 Instant Tea - Production

<u>Year</u>	<u>Production (Tonnes)</u>
1981	798.3
1982	765.7
1983	1037.0
1984	1067.0
1985	844.1

4 TECHNOLOGY INTELLIGENCE

4.1 Technology Intelligence

<u>Unit's Name</u>	<u>Brand</u>	<u>Equipment</u>
Glass Equipment (I) Ltd Bahadurgarh (Haryana)		Glass container plants and accessories
Ellen Engineering Company SF-520 Avanashi Road Peelamedu Coimbatore - 4	ELLEN	Wet grinders
Ashok Trading Co 18 R.N.Mukherjee Road Calcutta - 700 001	MACHINEX	Bag closing machines
Halder & Company 188/12A Raibahadur Road Calcutta - 700 053	HALDER	Solar cookers
Monga Packaging Pvt.Ltd P.B.No.17622 Malad(West) Bombay - 400 064	MONGA	Sealing machines
Essco Furnaces (P) Ltd 349 Anna Salai Shingole Building Madras - 600 035	ESSCO	Ovens, driers and industrial furnaces
Technova Engineering Services (P) Ltd 109 Aurobindo Marg Hauz Khas New Delhi - 110 016		Sachet and form fill seal machines
A1 Packaging 123 Vyapar Bhawan Carnac Bunder Bombay - 400 009	A-1	Sealing, packaging & masking machines
Voltas Limited Volta Sagar Dr.Ambedkar Road Bombay - 400 033	VEELINE	Soda making machine
ASCU Hickson Limited 7A Elgin Road Calcutta - 700 020	ASCU	Heat pump dryers
Indian Equipment Corporation 102 MIDC Andheri (East) Bombay - 400 093	IEC	Dryers (tray and fluid bed type)
J.T.Jagtiani Tulloch Road Apollo Bunder Bombay - 400 039	ITL	Paste Filling machine



Ambika Steel Fabrication
Jetpur Road
Gondal - 360 311

Flakes making machinery
(rice, maize and wheat)

Laxmi Electric Trading Co MARLEX
102 Rohaza Chambers
213 Nariman Point
Bombay - 400 021

Ice-cream freezers

Jemsons Services MILCENT
144 Pancharatna Building
New Queens Road
Bombay - 400 004

Domestic electric flour
mill

Monga Packaging Pvt.Ltd MONGA
P.B.No.17622 Malad (W)
Bombay - 400 064

Polyethylene sealing
machine

4.2 CFTRI Technologies as on 1.4.1986

Sl. No.	Processes	Technologies available			Released to industries	No.of parties
		Through CFTRI	NRDC	Total		
1.	Animal Products	34	8	42	10	25
2.	Beverage Products (non-alcoholic)	9	6	15	11	54
3.	Cereals, Millets and legumes	18	6	24	12	138
4.	Disinfestation processes	12	6	18	7	27
5.	Equipment & machinery	33	7	40	34	469
6.	Fruits & Vegetables	28	11	39	19	74
7.	Microbiology and Fermentation	9	4	13	10	32
8.	Protein products	16	10	26	15	36
9.	Plantation crops, spices & essential oils	16	16	32	15	145
10.	Other processes	12	-	12	6	7
Total		187	74	261	139	1007

